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THE OCCURRENCE OF A NEMATODE PARASITE IN THE GENUS *STYLODON*

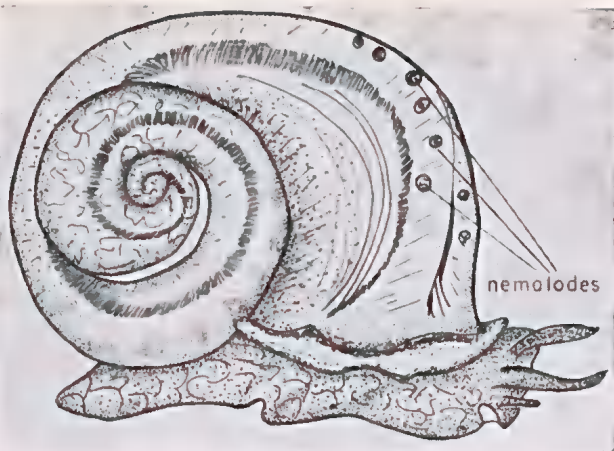
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Little is known concerning the presence of nematodes in molluscs, although molluscs have long been suspected of being intermediate hosts for nematodes parasitic in vertebrate animals such as sheep, cats and chickens. Previously, it has been the nematologists who were concerned with this problem, and the literature is found principally in the journals of parasitology. Chitwood (1937) and Mengert (1953) have summarized the present knowledge about the occurrence of nematodes in molluscs. Mengert reported that an examination of 1300 snails revealed 30 species of roundworms. This work was done in Germany on native material, mostly slugs. Chitwood and others have reported nematodes infesting several genera of molluscs including *Opeas*, *Helix*, *Polygyra*, *Anguispira*, *Succinea*, *Cepaea*, *Hygromia*, *Helicigona*, *Theba*, *Monacha*, and *Helicella* among the land snails, and *Lymnaea*, *Planorbis*, *Viviparus*, *Physa*, and *Bythinia* among freshwater snails. Nematodes may occur in molluscs accidentally, as parasites living their entire life cycle in the snail or as juveniles spending part of their life cycle there. It is this last group with which we are particularly concerned, for it contains species of economic importance.

Gerichter has done considerable experimental work on the life cycle of lung nematodes of sheep and cats, and has shown conclusively that at least five species of lung nematodes are dependent upon molluscs for their intermediate hosts.

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Text fig. 1.

Sketch of the animal of *Styloodon unidentata globata* v. Marts., with the shell removed, showing the location of the nematodes.

Most work of this kind has been done in areas of high population such as India and the Near East, but for much of the world the details of the mollusc-nematode relationship are unknown.

During the 1958 Yale University Expedition to the Seychelles Islands, a small collection of land shells was made, and we have been privileged to report upon this material.

While dissecting *Styloodon unidentata globata* v. Marts., we were surprised to find numerous encysted juvenile nematodes in the pulmonary cavity (Text fig 1, Plate 1, 1-2). A survey of the literature showed this to be an unusual site of infestation. Most molluscan nematodes are reported as occurring in the digestive tract or in the foot.

We immediately checked all the specimens in this lot, a series of fourteen specimens from Bois Teck, Silhouette Island, Seychelles, taken at an altitude of 800-1600 feet. Of these, six were found to be infested, with the degree of infestation ranging from one or two worms to one hundred or more per specimen. Although a careful examination was made of the entire animal, the worms were found only in the mantle cavity. Both adult and young snails were infested. A check was made of the preserved specimens of *Styloodon unidentata* Chem. and *Styloodon studeriana* Fér., but no worms were found.

Since these worms are juveniles, it has been impossible to make a positive determination. Dr. Nathan Reiser, of Northeastern University, who examined the worms, suggested that since some of the cysts appeared to be in the process of disintegration, this snail was perhaps not the normal host; this remains to be seen. Further material is needed.

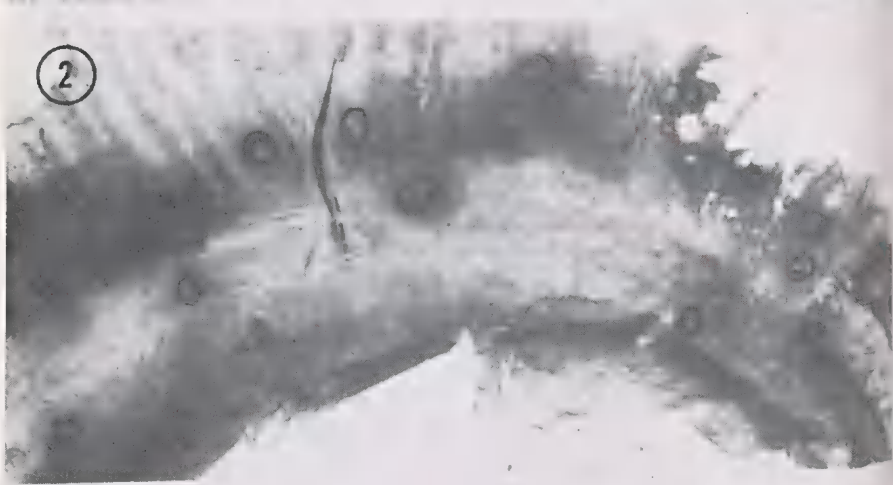
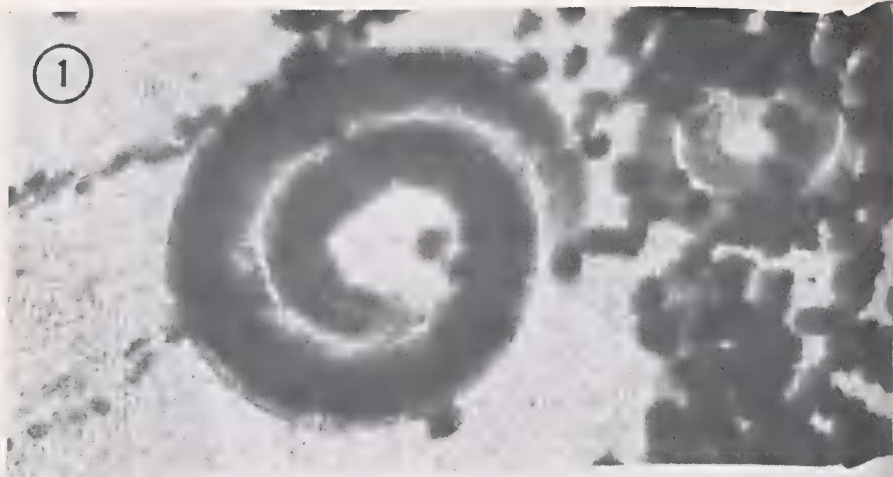


PLATE 7.

M. B. Chitwood, of the United States Department of Agriculture, who kindly consented to examine the worms, confirmed the authors' suspicions that the nematodes are probably members of the larval lungworms of the Metastrongyloida. The adults of this group parasitize mammals. Specimens of the worms have been deposited in the United States National Museum (U.S.N.M. Helm. Coll. No. 56678).

Very little is known of any nematodes from these islands, the animals which they infest, or their relationship to the roundworms of Africa and Asia. The problem is one that concerns both malacologists and parasitologists. It is here that shell collectors, both amateur and professional, can be of great assistance. As several writers have pointed out, thousands of animals may be examined in vain by the eager nematologist, while the unsuspecting malacologist innocently throws away the soft parts of the snails, and with them the precious nematodes.

A few minutes spent in examining the animal will prove not only helpful to the parasitologist, but also interesting for the collector. If one suspects that he has an infected animal, it should be placed in 75% alcohol and sent with a specimen of the shell to the authors, who will see that it is forwarded to the nematologist mentioned above.

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PLATE 7.

Stylodon unidentata globata v. Marts.

1. Encysted nematode in the wall of the pulmonary cavity. 90x.
2. Section of nematode-bearing tissue from the pulmonary cavity. 20x.
3. The infected snail (MCZ No. 225927). Natural size.